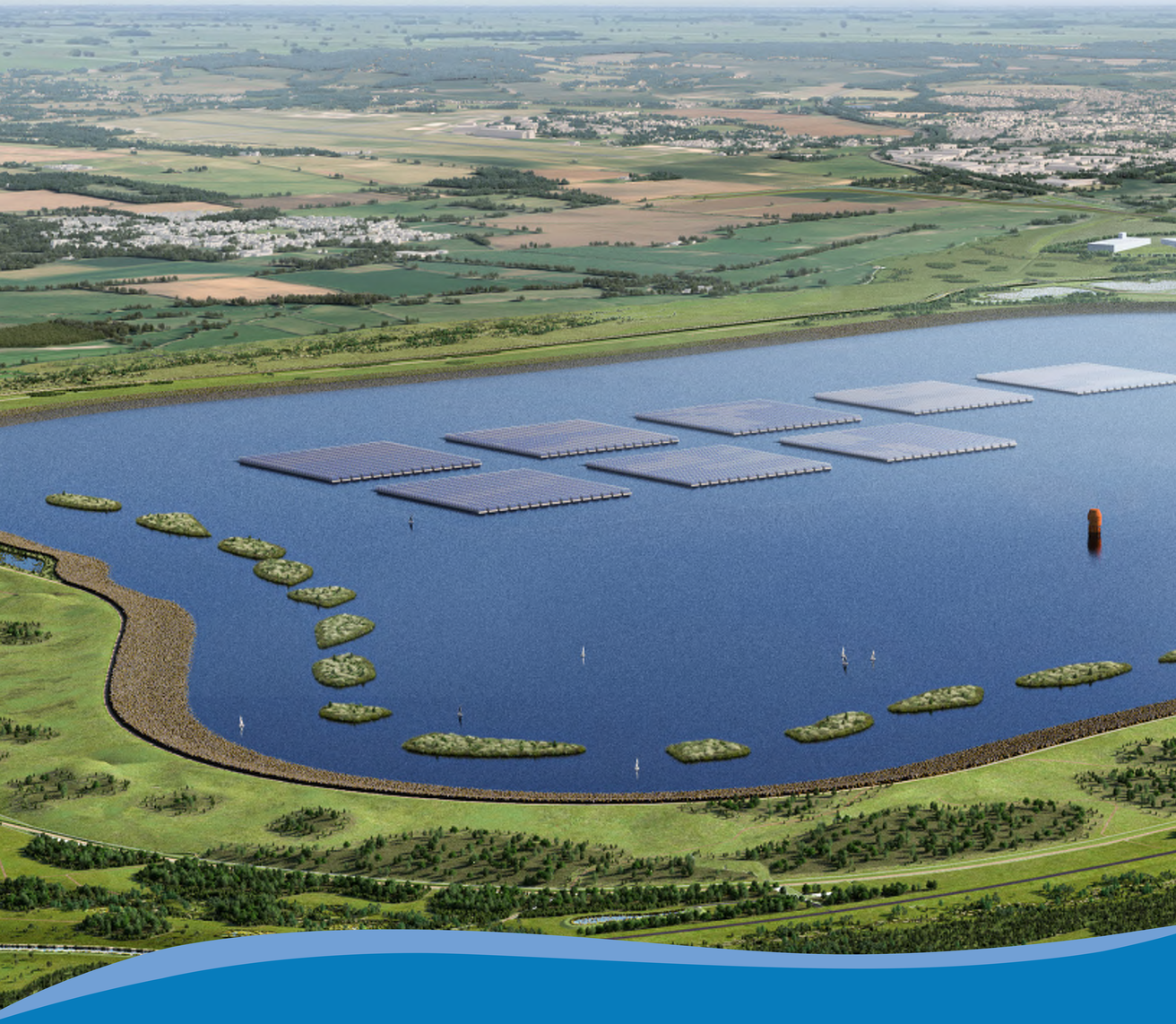
Welcome to this event

The South East of England is facing serious water shortages in the next 20-25 years, largely due to climate change, a growing population and a need to protect the environment. We need to act now to secure water for people, nature and the economy.

Since our last public consultation in summer 2024, we've developed and made changes to our proposals for a new reservoir to the south west of Abingdon.

Now we want to hear your views, before we submit our application for development consent in 2026.

At this event you can find out more about the project and our current proposals, use our immersive reservoir experience, ask questions of our project team and find out how to provide feedback.



Thames Water

Working with

Affinity Water

Taking care of your water

WATER for LIFE

from Southern Water

A space for nature, a place for people

As our reservoir proposals have evolved, so too has the potential legacy it could have. SESRO is a critical drought insurance policy for the South East for the next century, but it's also being designed as a place for people to use and enjoy for many years to come.

At this exciting stage in development, it's important that we give the project a new identity: one that better reflects the crucial role it will play in shoring up water supply, as well as the broader benefits it will deliver.

In developing this new identity, we've involved a range of stakeholders, including customers across the Thames Water, Southern Water and Affinity Water areas.

We've selected **White Horse Reservoir** as the project's new name, with a strapline of 'a space for nature, a place for people.'

For us, White Horse Reservoir roots this project in local heritage and in the natural world around us.

Equally important as the project's new name, the strapline tells us more about where the project's strengths lie; a space for nature, a place for people.



Why do we need a new reservoir?

The South East of England is facing the possibility of significant water shortages over the next 20 to 25 years. Largely due to climate change, a growing population, environmental pressures and increasing droughts.

Doing nothing is not an option

The Met Office has described summer 2025 as 'the hottest on record' and, in the Thames Water region alone, we've had less than half the rainfall we would expect over the summer months.

Not having enough water could mean:

- Schools and businesses being closed
- Navigable waters, such as canals, being closed
- Water restrictions or rationing, for example relying on standpipes in streets
- Having to abstract more water from rivers and streams, impacting habitats and wildlife
- Decreasing crop yields and higher food prices.

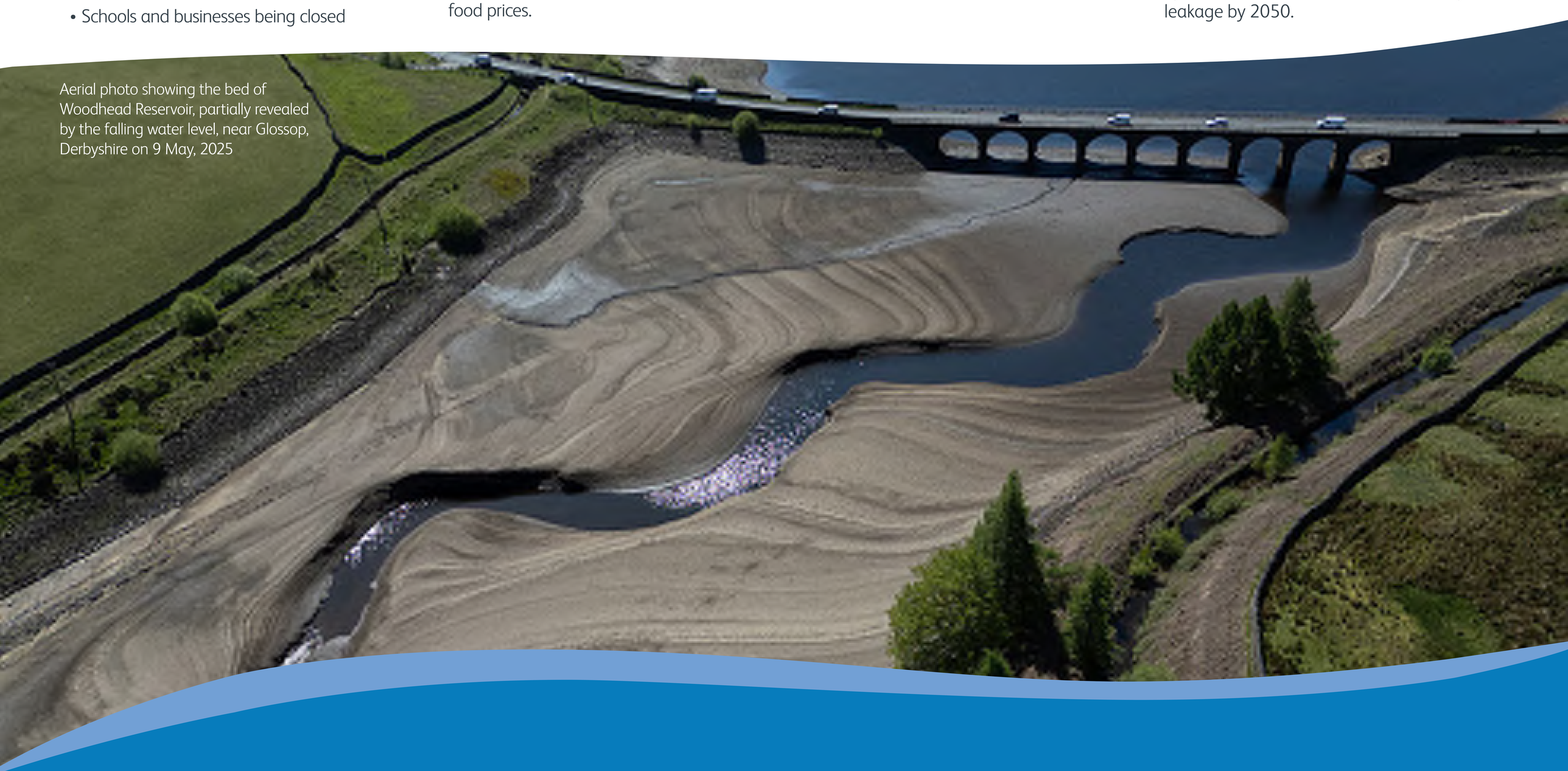
Making the most of the water supplies we have

We're taking ambitious steps to reduce water leakage and encourage efficient water use. This includes both improvements to our water supply infrastructure including water pipes, and customer-focused initiatives, supported by government policy.

Tackling leakage

Over the past five years we've reduced leakage by 13%, but we recognise that there's more to do.

We're focused on finding and fixing leaks faster, targeting the largest leaks first. By 2030 we're aiming to reduce leakage by 23% and we're committed to halving leakage by 2050.



Aerial photo showing the bed of Woodhead Reservoir, partially revealed by the falling water level, near Glossop, Derbyshire on 9 May, 2025

A vital new water resource for the South East

The South East Strategic Reservoir Option (SESRO) is one of the most vital infrastructure projects in the country and would help secure future water supplies for 15 million people across the South East – including customers served by Thames Water, Southern Water and Affinity Water.

The proposed new reservoir would be located between the A34 to the east, the Great Western Main Line railway to the south, the A338 to the west, and the River Ock to the north.

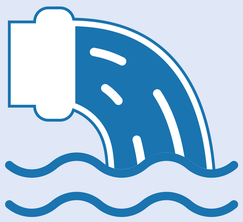
The site was chosen because:

- It's close to the River Thames
- It has reasonably flat land and the right geology and ground conditions for a reservoir, e.g. the site has enough thickness of clay to retain large volumes of water
- It's adjacent to a railway line and has major road links that could be used to deliver construction materials
- There are very few environmentally designated sites in the vicinity.



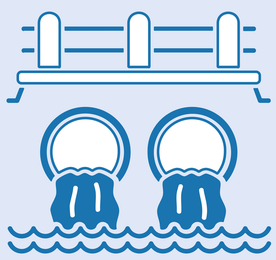
Location of the proposed new reservoir

How it would work



Water would be **pumped** from the River Thames into the reservoir when river flows were **high** with plenty of **available water.**

A new water intake from the river would allow us to **draw water via a tunnel** to the reservoir. The water would **slowly fill the reservoir** over the wetter part of the year.



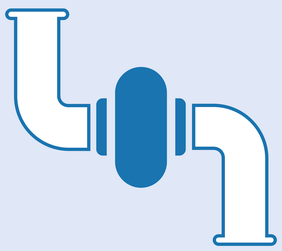


Then, during **drier periods**, we could release water from the reservoir back into the river **via an outfall structure.**

This released water would flow downstream to existing **water treatment works** to be treated and put into the **supply network** for homes and businesses.



A new water treatment works at the reservoir site would also allow for potable water to be pumped via a **new pipeline** to Southern Water customers. The pipeline itself would be subject to a separate planning application and consultation.

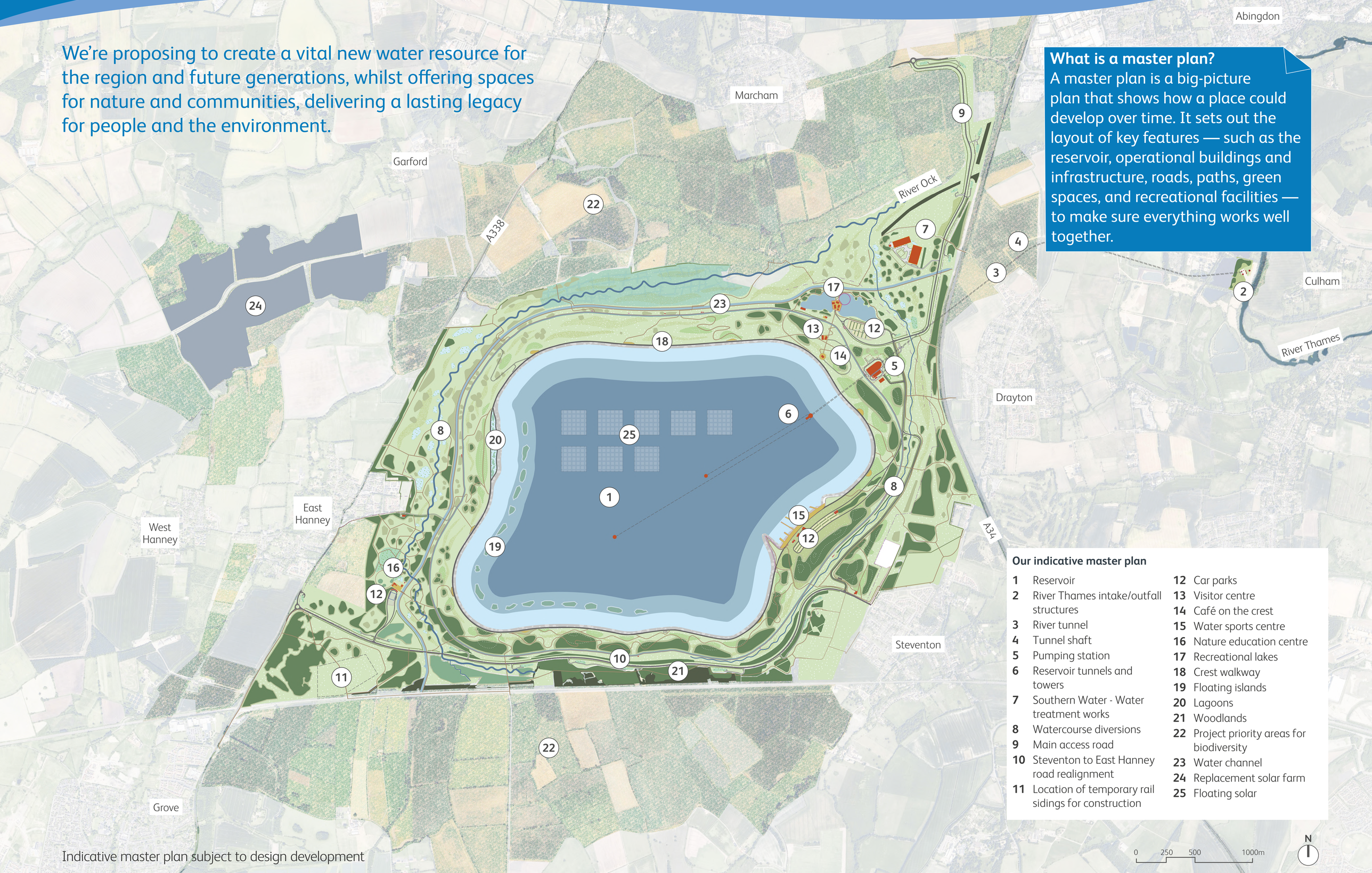


Thames Water

Our indicative master plan for the reservoir site

We're proposing to create a vital new water resource for the region and future generations, whilst offering spaces for nature and communities, delivering a lasting legacy for people and the environment.

What is a master plan?
A master plan is a big-picture plan that shows how a place could develop over time. It sets out the layout of key features — such as the reservoir, operational buildings and infrastructure, roads, paths, green spaces, and recreational facilities — to make sure everything works well together.



Our indicative master plan

1 Reservoir
2 River Thames intake/outfall structures
3 River tunnel
4 Tunnel shaft
5 Pumping station
6 Reservoir tunnels and towers
7 Southern Water - Water treatment works
8 Watercourse diversions
9 Main access road
10 Steventon to East Hanney road realignment
11 Location of temporary rail sidings for construction
12 Car parks
13 Visitor centre
14 Café on the crest
15 Water sports centre
16 Nature education centre
17 Recreational lakes
18 Crest walkway
19 Floating islands
20 Lagoons
21 Woodlands
22 Project priority areas for biodiversity
23 Water channel
24 Replacement solar farm
25 Floating solar

Indicative master plan subject to design development

Thames Water

Our current proposals: infrastructure 1

At the heart of our proposals is the reservoir itself and the infrastructure needed to collect and store water, and move it to where it's needed.

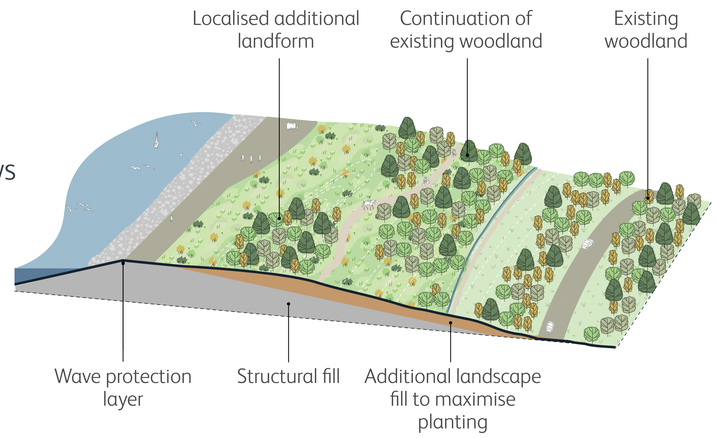
Embankments

The reservoir would be enclosed by embankments built from layers of clay that exists in abundance in the ground where the reservoir would be built.

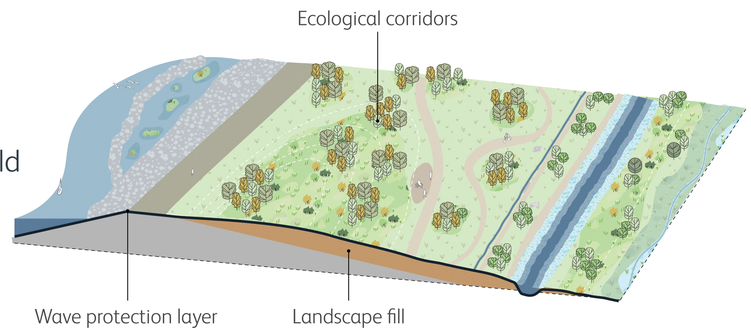
Clay would be placed horizontally and compacted to create strong, stable foundations.

The outer slopes of the embankments would be gently sloping and gradual, and the inner face closest to the water typically protected by rip rap (stones) to act as a breakwater.

The southern embankment would be densely wooded, to provide natural screening from the Steventon – East Hanney Road, with rich habitats and views from the embankment of the surrounding environment.



The western embankment would be an important wildlife corridor connected to seasonal wetland and areas of meadow, with species-rich grasses and wild flowers.



Pumping station

A new pumping station, located to the east of the reservoir, would play a crucial role in managing water transfer between the reservoir and the River Thames. It would connect to the reservoir and to the river via underground tunnels, enabling water to be pumped to and from the reservoir.

1 Pumping station
2 Electrical building
3 Renewables substation
4 Landscape bund
5 Foul water pumping station



Illustration of the pumping station compound and landscape bund and screening

Reservoir towers, tunnels and shafts

Water towers in the reservoir would control the flow of water into and out of the reservoir.

Two tunnels containing pipework would be used to transfer water in and out of the reservoir. Another tunnel, known as the river tunnel, would connect the pumping station to an intake and outfall point on the River Thames near Culham.

1 Maintenance shaft
2 Pumping station
3 Primary reservoir tower
4 Secondary reservoir towers
5 Reservoir tunnel



Illustration of reservoir towers and tunnels

Our current proposals: infrastructure 2

At the heart of our proposals is the reservoir itself and the infrastructure needed to collect and store water, and move it to where it's needed.

Water treatment works

A water treatment works for the Thames to Southern water transfer project would be built to treat up to 120 million litres of water a day from the reservoir, making it suitable for drinking water supply via a new pipeline to customers in Berkshire and Hampshire.



Illustration of water treatment works

1 Water treatment works
2 Water tower

River Thames intake/outfall

An intake and outfall structure would be built on the west bank of the River Thames near Culham. This would provide the vital link between the river and the new reservoir, allowing water to be drawn in to fill the reservoir when river levels are high and be safely returned to the river when additional water is needed downstream.

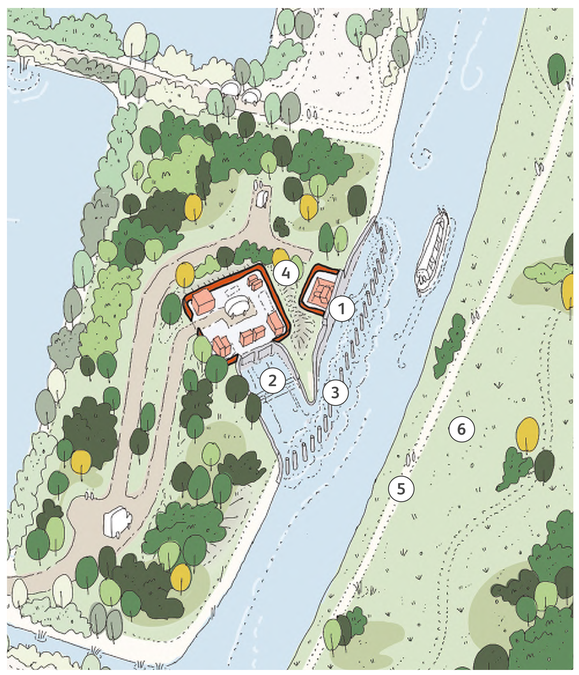


Illustration showing our proposals for the intake/ outfall with the surrounding environment

1 Intake
2 Outfall
3 Protective pile barrier
4 Crane pad
5 Thames Path National Trail
6 Berm

Renewable energy

The project would include a range of renewable energy features to make best use of the site and help meet our sustainability objectives. We're considering:

- Floating solar panels could be installed on the reservoir itself, covering around 6% of the water surface and generating up to 40MW of power at peak
- Ground-mounted solar panels could be built to the west of the reservoir site to replace the three solar farms that would be lost if the reservoir is built
- Solar panels on buildings and car parks would also contribute, supported by a battery storage system
- Hydropower turbines within the pumping station would recover energy when water is released back into the River Thames.

Utility diversions and connections

Before we start building the embankments, we'll need to re-route existing utilities such as power, water, telecoms, and foul drainage. We're working with the utility companies to plan this.

1 Replacement solar farm
2 Floating solar panels

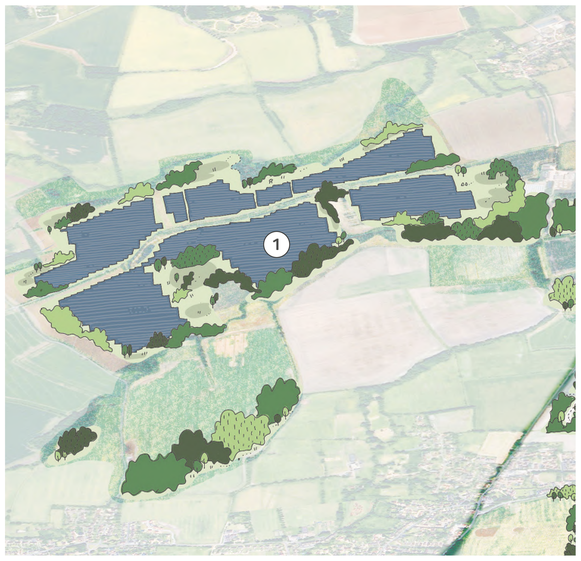


Illustration showing potential replacement solar farm

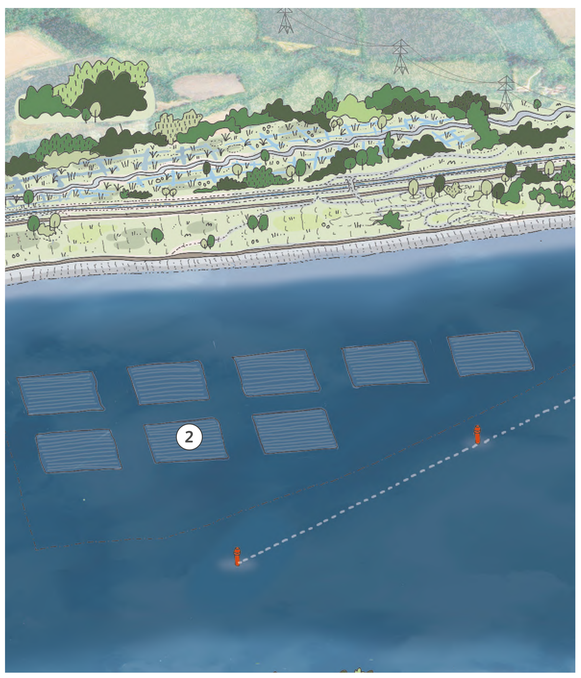


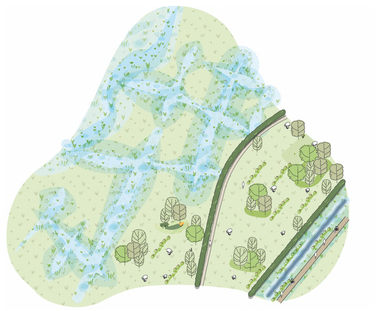
Illustration showing floating solar panels on reservoir

Our current proposals: environment

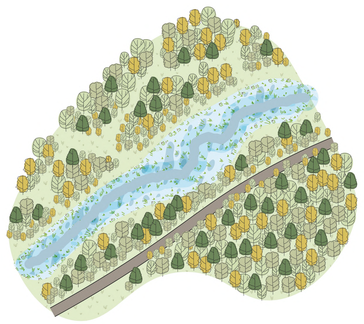
The environmental features of the site, such as grasslands and wooded areas, habitats, seasonal wetlands, lagoons and islands.

Habitats and priority areas for biodiversity

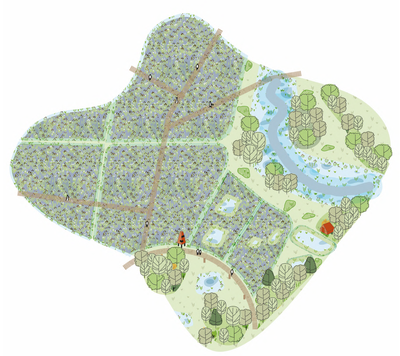
By creating new habitats and connecting them to existing habitats, we're aiming not just to replace what is lost but to provide a long-term enhancement to the local landscape.



Flood grazing marsh



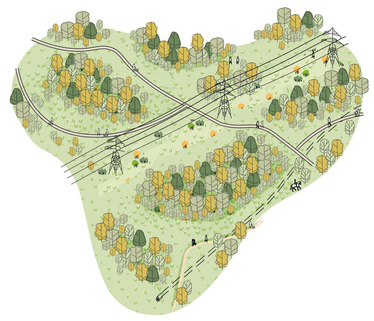
Broadleaf woodland



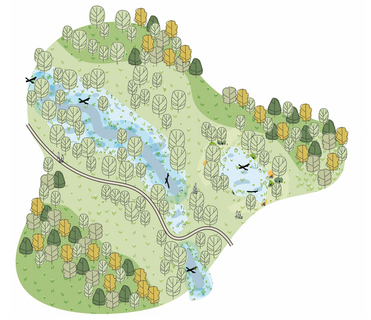
Constructed wetlands

Seasonal wetlands, grasslands and woodlands

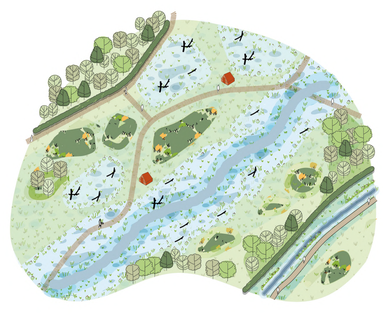
We're proposing a range of new habitats across the reservoir site for wildlife and to help the reservoir connect with the surrounding landscape.



Woodland blocks



Wet woodland



Seasonal wetlands

Lagoons and floating islands

We're considering creating wetland lagoons and floating islands on the reservoir. These would be planted with a range of native aquatic species, creating nesting and feeding habitats for birds and supporting a variety of other wildlife.

1 Project priority areas for biodiversity
2 Lagoons
3 Floating islands



Illustration showing potential lagoons and floating islands

Wider areas for biodiversity - beyond the core reservoir site

As well as the habitats created on the main reservoir site, we're proposing to enhance habitats further afield, beyond the core reservoir site.

These would help tie the reservoir's natural environment into the broader landscape, ensuring connectivity between wildlife corridors and making local ecological networks more resilient.

The Abingdon Flood Alleviation Scheme

Working closely with the Environment Agency, and in support of their Abingdon Flood Alleviation Scheme, we've designed the main access road to the reservoir so that it could eventually form part of a flood embankment that could help reduce the risks of flooding in Abingdon.

With the Environment Agency, we are also looking at how flood storage areas, bunds and control gates adjacent to the River Ock could be delivered alongside the proposed new reservoir.

The Wilts & Berks Canal

A section of the historic Wilts & Berks Canal lies within the area of land that would be needed for the new reservoir and would be lost during construction. To compensate, we're proposing creating a new lined water channel to allow for the future provision of a navigable canal.

The channel would be constructed on a realigned route through the site, designed to respect the canal's heritage and allow for future navigation if locks were added later.

Watercourse diversions and flood management

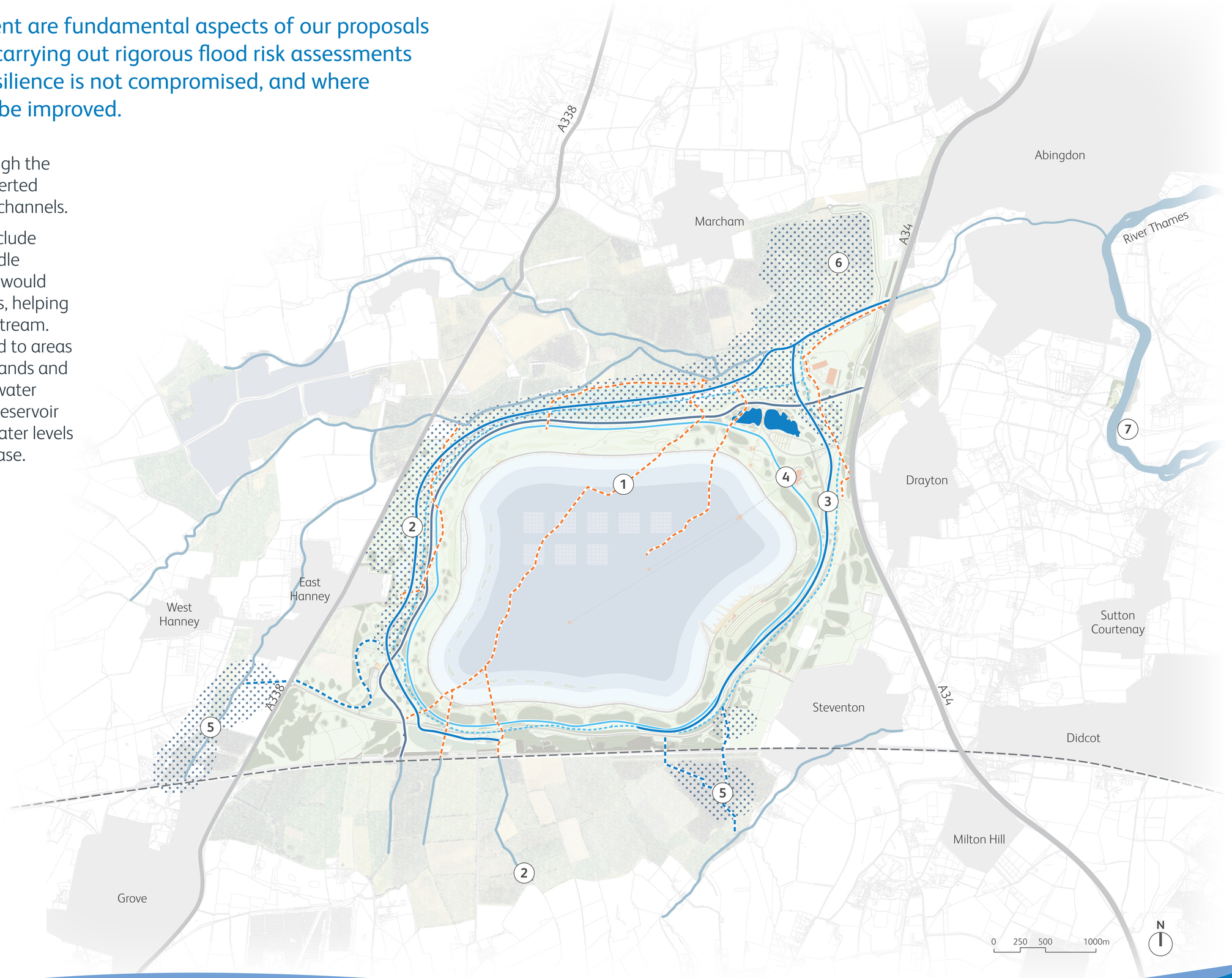
Water and flood management are fundamental aspects of our proposals for the new reservoir. We're carrying out rigorous flood risk assessments to ensure that local flood resilience is not compromised, and where reasonably practicable, can be improved.

Existing watercourses that run through the proposed reservoir site would be diverted around it, creating new naturalised channels.

The designs for the new reservoir include flood management features to handle rainwater. During heavy rain, runoff would be controlled to match natural levels, helping to reduce the risk of flooding downstream. Surface water would also be directed to areas where it can enhance seasonal wetlands and other ecological features. A groundwater drain would be created around the reservoir embankments to manage groundwater levels and ensure flood risk does not increase.

1 Existing streams and ditches
2 Cow Common Brook would be redirected west, with small ditches feeding into Childrey Brook
3 Mere Dyke would be redirected to the east side of the site
4 Rainwater from the site would drain into new water features, including the diverted streams, the Recreational Lakes, and the water channel for the Wilts & Berks Canal
5 Potential East Hanney and Steventon drainage improvements have been identified which could slightly increase the SESRO channel capacity, bringing local flood protection benefits
6 Potential Abingdon Flood Alleviation Scheme
7 Flood management works on the east bank of the River Thames would help balance any changes in flood risk

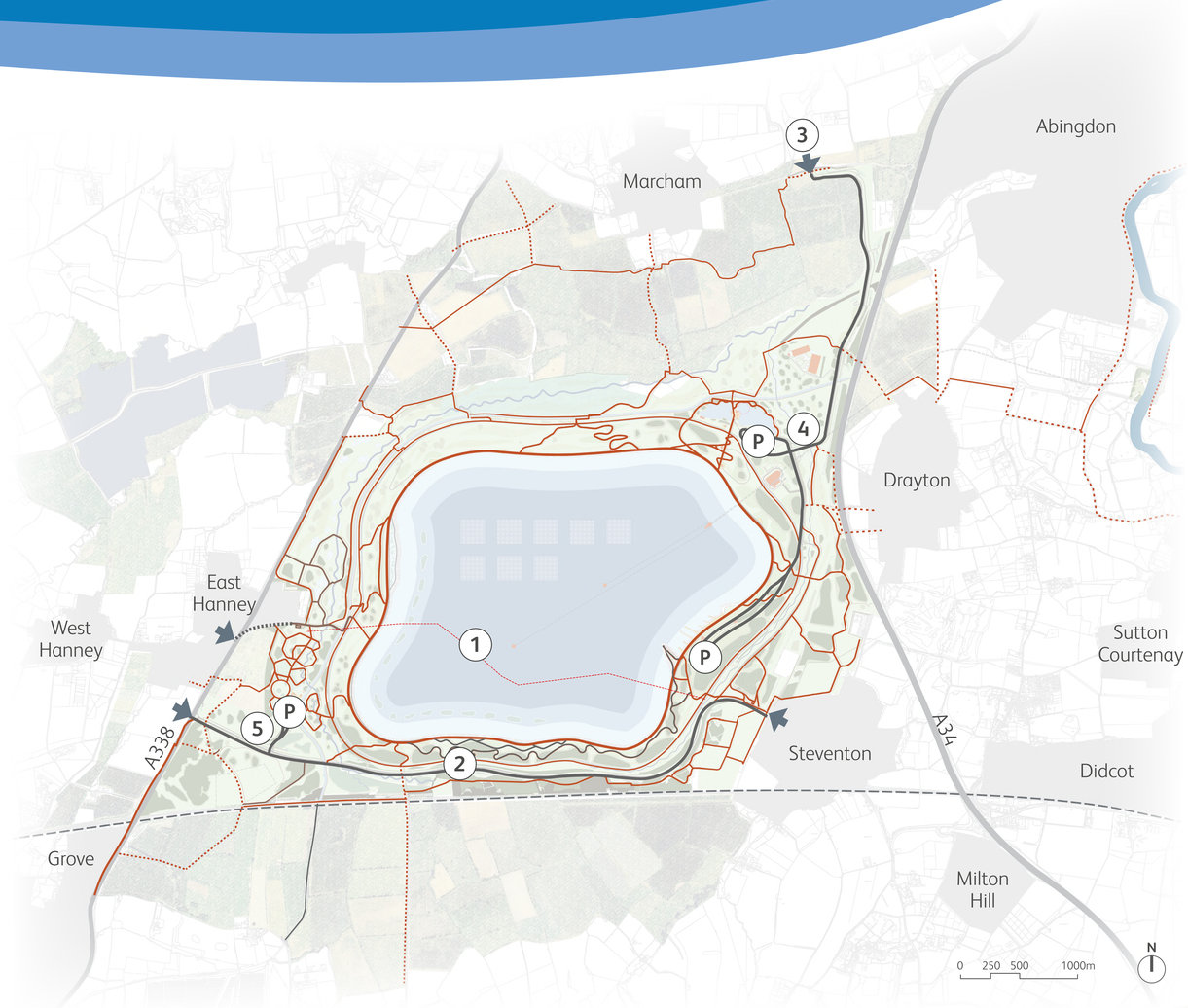
- Existing watercourses (retained)
- Existing water courses (removed)
- Watercourse diversion
- Potential channel for additional capacity
- Flood alleviation
- Toe drain
- Groundwater drain
- Water channel for Wilts & Berks Canal



Our current proposals: movement

To support movement around the site, our proposals consider how visitors, workers and local residents would be able to enjoy the new reservoir while connecting around the site safely.

We're proposing new roads and junctions, parking facilities, improvements to the wider road network, and a strong emphasis on active travel.



1 Existing Steventon to East Hanney road removed
2 Steventon to East Hanney road diversion
3 Main site access
4 Visitor centre accessed via the main access road from Marcham Road with connection to the water sports centre access road
5 Access to the nature education centre is from the new Steventon/ East Hanney road

Existing active travel
Proposed active travel
Proposed vehicular access
(P) Parking
Main gateways



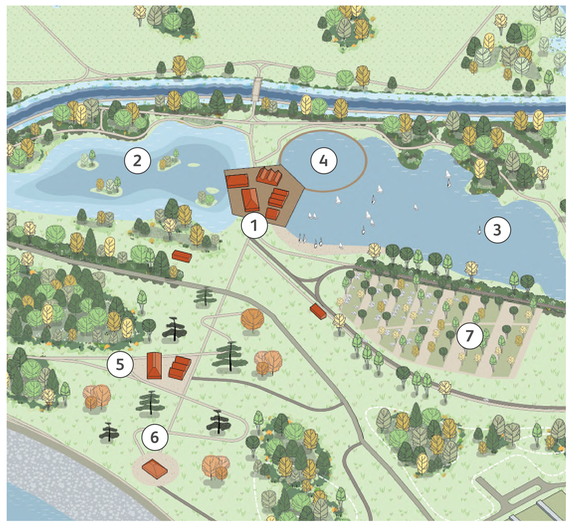
Our current proposals: recreation and amenity

Our proposals for a network of recreational and amenity facilities arranged around three main hubs: a centre for visitors and recreational lakes, a centre for water sports and a nature education centre.

Recreational lakes

Two recreational lakes could be located to the north east of the site. Used during the construction period for capturing excess water, they would be repurposed once construction is complete.

1 Recreational centre
2 Nature lake
3 Recreational lake
4 Swimming lido
5 Visitor centre
6 Café
7 Car park

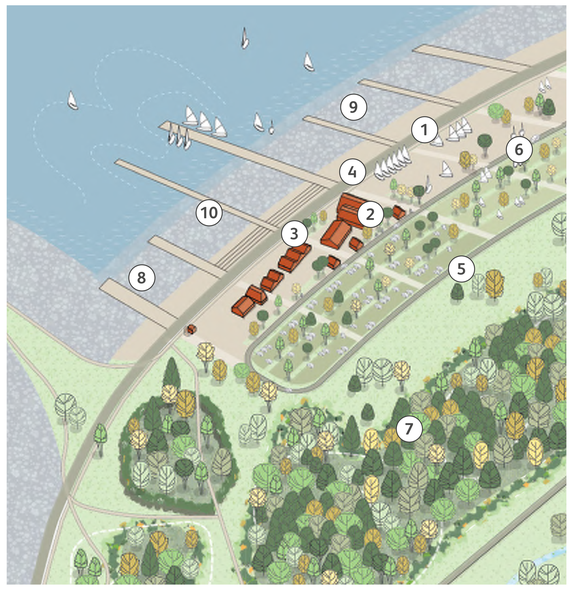


Illustrative view of new recreational lakes and visitor centre

Water sports centre

The water sports centre, which would be adjacent to the eastern edge of the reservoir, would facilitate a range of non-motorised watercraft activities, such as sailing.

1 Water sports centre
2 Boat stores
3 Maintenance and operation facilities
4 Staging area
5 Car park
6 Boat parking
7 Woodland
8 Peninsula
9 Slipways
10 Maintenance slipway

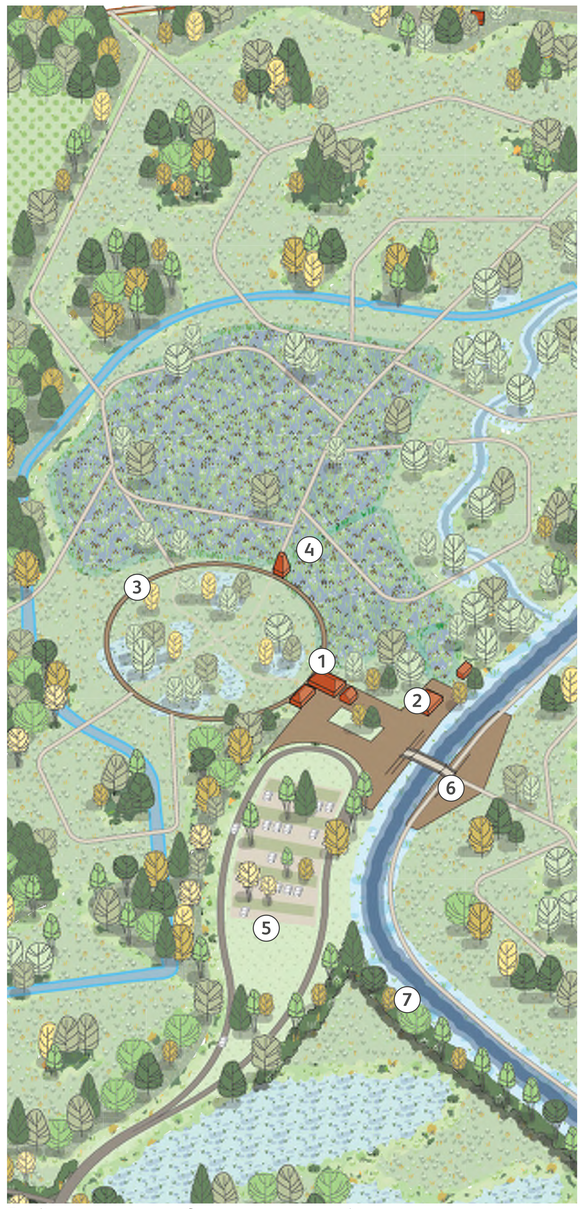


Indicative view of new water sports centre

Nature education centre

A nature education centre, located on the south-western edge of the reservoir, could provide direct access to seasonal wetlands and nature trails. The centre would showcase habitats and wildlife through features such as boardwalks, bird hides and dipping platforms.

1 Nature education centre and café
2 Operational buildings
3 Boardwalk
4 Observation tower
5 Car park
6 Space for future footbridge
7 Water channel

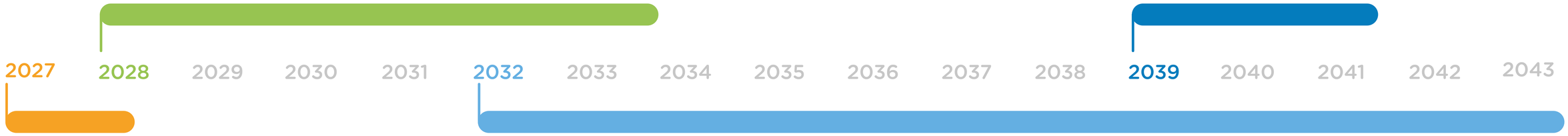


Indicative view of new nature education centre

Building the new reservoir

Building a reservoir of this scale will be a major engineering and construction challenge, requiring significant resources, careful planning, and close management to minimise disruption to local communities.

Broadly speaking, we expect construction activities to happen in three main overlapping phases, followed by a commissioning period and the filling of the reservoir:



Enabling works phase – setting up and starting work (2028 to 2034)

Once the DCO is granted we'll start on our enabling works which will include the building of the new East Hanney to Steventon road, and access roads onto the site. We'll also begin site clearance and demolitions, establishing our main compounds, and carrying out utility diversions and watercourse diversions. By 2032 we're planning to build the temporary rail sidings.

Early works phase (2027 to 2028)

The first phase would begin before the DCO is consented by the Secretary of State. It includes the creation or enhancement of ecological habitats, followed by translocation of protected species where feasible. This is likely to be an ongoing task throughout construction. We'd apply for licences and secondary consents as required.

Main works phase (2032 to 2043)

We'll be beginning the construction of the embankments and continuing the watercourse diversions on the eastern and western side of the reservoir location.

The operational infrastructure, such as the pumping station, the river and reservoir tunnel, the intake and outfall structure and the water treatment works will also be built. We'll also start construction of the public and recreational facilities, as well as landscaping.

Commissioning and filling – bringing the reservoir into use (2039-2041)

From 2039 we anticipate we'll start filling the reservoir with water from the River Thames, once the Construction Engineer has certified it is safe to do so. Water will be available for use from 2040, and between then and 2043 we'll be completing the recreational facilities and landscaping activities.

Managing environmental impacts

A project of the scale of the proposed new reservoir will inevitably have environmental impacts, but we're committed to ensuring these are fully understood and carefully managed.

We're sharing our Preliminary Environmental Impact Report as part of this statutory public consultation. It sets out the likely significant environmental effects during construction and operation, as understood at this stage. We've also outlined the things we could do to mitigate those effects.

We'll also produce an Environmental Statement which will be submitted with our application for a Development Consent Order, which is like a planning application for Nationally Significant Infrastructure Projects.

2024 → 2025 → 2026

EIA Scoping Report

An EIA Scoping Report was submitted to the Planning Inspectorate, setting out the scope and environmental assessment methods that the Applicant intends to use. The Planning Inspectorate consulted with statutory bodies and provided a Scoping Opinion - the basis of subsequent work for the EIA.

Preliminary Environmental Information (PEI) Report

The PEI Report includes a preliminary assessment of the likely significant environmental effects of the Project during construction and operation, based on the information available at this time.

Environmental Statement

The Environmental Statement will set out the completed assessments of the likely significant environmental effects of the Project, how it would be managed by appropriate mitigation, and whether the effects would be monitored after consent has been granted. The Environmental Statement will be submitted to the Planning Inspectorate as part of the application for development consent.

We're look at a range of potential environmental impacts:

- Water environment
- Aquatic ecology
- Terrestrial ecology
- Historic environment
- Landscape and visual
- Geology and soils
- Traffic and transport
- Air quality
- Noise and vibration
- Socio-economics and communities
- Human Health
- Greenhouse gases
- Climate resilience
- Major accidents and disasters
- Cumulative effects

The findings of this ongoing assessment work will inform every stage of the project. By embedding environmental considerations from the outset, we aim not only to minimise harm but to deliver positive outcomes for people and nature.

For more information on our Statutory Consultation Brochure, our PEI Report, and PEI Report Non-technical Summary, please visit **thames-sro.co.uk/sesro/statcon2025**



Thames Water

Project timetable

The proposed new reservoir is classified as a Nationally Significant Infrastructure Project (NSIP), meaning that it must go through a rigorous planning and approval process before construction can begin.

Jan 2022

Water Resources South East (WRSE) published it's Emerging Regional Plan for South East England

Dec 2022

We launched a public consultation on our draft Water Resources Management Plan

Summer 2024

We launched a non-statutory public consultation on our proposals for the new reservoir

Aug 2024

The government approved our Water Resources Management Plan, agreeing the need for the proposed new reservoir

Aug 2024

We submitted our Environmental Impact Assessment Scoping Report to the Planning Inspectorate

Spring / Summer 2025

We held engagement campaigns to update local communities and stakeholders about changes to our proposals for the reservoir

Jun 2025

The proposed new reservoir is designated as a Project of National Significance by the government

Autumn 2025

We launched our statutory public consultation on our current proposals for the new reservoir

Autumn 2026

We're planning to submit our application for a Development Consent Order

2028

Expected date for development consent to be granted

2029

Expected start of construction dependent on Secretary of State decision

2040

Water from the reservoir available for use

2043

Landscaping and recreational facilities complete

Have your say

Your feedback is essential in shaping the future of this project.

This public consultation provides an opportunity for everyone to have their views heard and influence the development of the proposed new reservoir.

You can get involved by:

Completing our **online consultation survey**, which asks for your views on key aspects of the proposals.

Submitting a **written response** if you wish to provide more detailed feedback.

All responses will be carefully considered and summarised in a Consultation Report, which will be published as part of our Development Consent Order application. This ensures your views are part of the evidence that informs decision-making.

By taking part, you can help shape a project that will provide secure water supplies, protect the environment, and deliver lasting benefits for the South East.

Have your say!



Thames Water